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IS 675 (1973): Bunting, Worsted [TXD 4: Wool and Wool Products]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS : 675 - 1973
(Superseding IS:676 - 1963)
(Reaffirmed 1996)

REAFFIRMED

2007

Indian Standard

SPECIFICATION FOR
BUNTING, WORSTED

(Second Revision)

Second Reprint SEPTEMBER 2000

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

AMENDMENT NO. 1 APRIL 1975
TO
IS : 675-1973 SPECIFICATION FOR
BUNTING, WORSTED
(*Second Revision*)

This amendment is being issued to specify the use of polyester fibres in addition to polyamide fibres for blending with indigenous wool.

Alteration

(*Page 4, Note in Table 1*) — Substitute the following for the existing note:

"NOTE — Polyamide or polyester fibres may be used in admixture to indigenous wool at the top stage to the extent of 10 to 15 percent, if agreed to between the buyer and the seller. The percentage contents of wool and other fibres shall be determined in accordance with IS : 2006-1962 'Method for quantitative chemical analysis of binary mixtures of protein fibres and certain other fibres'."

(TDC 4)

Reproduced by Reprography Unit, ISI, New Delhi

AMENDMENT NO. 2 JUNE 1975
TO
IS:675-1973 SPECIFICATION FOR
BUNTING, WORSTED

(Second Revision)

Alteration

[Page 7, Table 3, col 3, against Sl No.(ii)
(b)] - Substitute '0.3, Min' for '0.03, Min'.

(TDC 4)

Reprography Unit, ISI, New Delhi

AMENDMENT NO. 3 DECEMBER 1998
TO
IS 675 : 1973 SPECIFICATION FOR
BUNTING, WORSTED

(*Second Revision*)

(*Page 4, Table 1, col 2, against Variety No. 2*) — Substitute '44 s' for '40 s/44 s'.

[*Page 4, Note in Table 1 (see also Amendment No. 1)*] — Substitute the following for the existing:

'NOTE — Polyamide fibres may be used subject to a maximum of 15 percent in the admixture to indigenous wool at the top stage. The percentage content of wool and polyamide shall be determined in accordance with IS 2006 : 1988 'Method for quantitative chemical analysis of binary mixtures of protein fibre with certain other non-protein fibres (*second revision*).'

(*Page 5, clause 2.2.2*) — Substitute the following for the existing:

'2.2.2 The fabric shall be rendered moth-proof by using any suitable moth-proofing agent subject to prior approval of buyer. The supplier shall indicate the type of moth-proofing agent used and its concentration. He shall also give the test method for determination of the quantity of moth-proofing agent used. When new moth-proofing agent is used, besides furnishing the concentration and test method, the supplier shall also render a certificate issued by Government authorised test house about the efficacy of the moth-proofing agent used and also of its being free from any undue toxicity.

If for any reason the fabric has not been rendered moth-proof, the same shall be preserved with naphthalene (*see* IS 539 : 1974) using a minimum quantity of 5 kg/m³ of volume of the package.'

[*Page 7, Table 3, Sl No. (ii), and Amendment No. 2*] — Delete the requirement and renumber the subsequent requirement.

(*Page 7, Table 3*) — Insert the following new requirement at the end of the table:

Sl. No.	CHARACTERISTICS	REQUIREMENTS	METHOD OF TEST
iii)	pH of aqueous extract	5.0 - 7.5	IS 1390 (Cold Method)

(TX 04)

Reprography Unit, BIS, New Delhi, India

Indian Standard
SPECIFICATION FOR
BUNTING, WORSTED
(*Second Revision*)

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(*Continued on page 2*)

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Indian Standard
SPECIFICATION FOR
BUNTING, WORSTED
(*Second Revision*)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 18 October 1973, after the draft finalized by the Wool and Wool Products Sectional Committee had been approved by the Textile Division Council.

0.2 Bunting, worsted, is intended for making different flags used by the Ministry of Defence as well as for signalling flags used by the Railways.

0.3 This standard has been taken up for revision to make it up-to-date. The grade of wool tops for the manufacture of yarn has been defined and mothproofing requirement has also been specified. The colour fastness rating to light has been reduced from 6 to 5.

0.4 In this revision the requirements of bunting cloth of heavy type specified in IS:676-1963* have also been covered and consequently IS:676-1963* has been withdrawn.

0.5 Assistance has been derived in the formulation of this standard from IND/TC/1204 (g) 'Bunting' issued by the Ministry of Defence and variety 2 is based on the Defence Specification.

0.6 This standard contains clauses 2.2.2, 4.1.1, 6.1, 6.2 and 7.3 which call for agreement between the buyer and the seller for permitting the buyer to use his option for selection to suit his requirements.

0.7 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS:2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Specification for bunting, worsted (*revised*).

†Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard prescribes the constructional particulars and other requirements of two varieties of bunting, worsted.

1.2 This standard does not specify the indeterminable characteristics like general appearance, feel, finish and shade of cloth (*see also 4*).

2. MANUFACTURE

2.1 The particulars regarding the grade of wool, count of yarn, weave, method of dyeing and finishing for the manufacture of cloth are given in Table 1.

TABLE 1 MANUFACTURING PARTICULARS OF BUNTING, WORSTED

VARIETY No.	FINENESS GRADE OF WOOL TOPS* (<i>see</i> NOTE)	APPROXIMATE COUNT OF BASIC YARN† [UNIVERSAL COUNT (METRIC COUNT)]		WEAVE	METHOD OF DYEING	TYPE OF FINISH
		Warp	Weft			
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	48 s	32 tex × 2 (Nm 32/2)	44 tex (Nm 22.5)	Plain	Piece dyeing	Clear finish
2	40 s/44 s	40 tex × 2 (Nm 25/2)	40 tex × 2 (Nm 25/2)	Plain	Piece dyeing	Clear finish

NOTE — Polyamide fibres may be used to the extent of 10 to 15 percent in admixture to indigenous wool at the top stage. The percentage content of wool and polyamide shall be determined in accordance with IS : 2006-1962 'Quantitative chemical analysis of binary mixtures of protein fibres and certain other fibres'.

*For determination of fineness grades of wool tops, a reference may be made to IS : 5911-1970 'Fineness grades of wool tops'.

†Yarn shall be spun on worsted system.

2.2 Cloth—The cloth shall be clean scoured and free from grease, soap, filling or any other admixture which might give it fictitious weight, substance or firmness.

2.2.1 The selvages shall be firm and straight.

2.2.1.1 In case of bunting of Variety 1, 12 ends shall be drawn, 2 in a heald and 4 in a dent, so as to form a thick stripe at an approximately 15 cm from the selvages. If the cloth is woven with split selvages, these shall be firm so as to prevent unravelling of warp yarn.

2.2.1.2 In case of bunting of Variety 2 the selvages shall consist of 16 threads crammed into a space of 6 mm.

2.2.2 The cloth shall be rendered moth-proof. The proofing agent employed for the purpose may be dieldrin or DDT.

NOTE — Proofing agents other than those prescribed above may be used subject to agreement between the buyer and the seller. Proofing agent shall, however, be of such a nature and composition that its required amount can be estimated by a chemical test.

2.2.3 The cloth when visually examined both against light and on surface shall not contain more than one objectionable flaw per 8 m length. The objectionable flaws shall be those which strike immediately the eyes of the person examining the cloth and shall be deemed to include:

- a) missing ends and picks;
- b) floats;
- c) cuts and holes;
- d) stains;
- e) weft bar and warp section marks;
- f) big slubs, knots and specks;
- g) dyeing defects (streaks, patches, etc); and
- h) thick and thin places.

2.2.3.1 All objectionable flaws shall be marked by means of a thread sewn in the selvedge opposite the flaw, and an allowance of 10 cm shall be given for each such flaw. Only one selvedge shall be used for tagging.

2.2.3.2 A reference may be made to IS:4125-1967* for details of these defects.

3. REQUIREMENTS

3.1 The constructional particulars of cloth shall conform to those given in Table 2.

3.2 Colour fastness ratings and other requirements of cloth shall conform to those given in Table 3.

4. SEALED SAMPLE

4.1 If, in order to illustrate or specify the general appearance, feel, shade, finish, etc, of a particular variety of cloth, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

4.1.1 The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

*Glossary of terms pertaining to defects in fabrics.

TABLE 2 CONSTRUCTIONAL PARTICULARS OF CLOTH,
BUNTING, WORSTED

(Clause 3.1)

VARIETY No.	ENDS/ dm	PICKS/ dm	WEIGHT	BREAKING LOAD ON 15 × 20 cm STRIPS, <i>Min</i>		LENGTH (<i>see</i> NOTE)	WIDTH (EXCLUSIVE OF SELVED- GES), <i>Min</i>
				Warp	West		
(1)	(2)	(3)	(4) g/m ²	(5) kg	(6) kg	(7) m	(8) cm
1	125	135	145	65	45	36 and above	45 or in multiples thereof
2	120	120	185	85	85	do	145 or as agreed
TOLERANCE, PERCENT	±5	±5	±5	—	—	—	—
METHOD OF TEST	IS : 1963- 1969*	IS : 1963- 1969*	IS : 1964- 1970†	IS : 1969-1968‡		IS : 1954- 1969§	IS : 1954- 1969§

NOTE — The number of short length pieces (measuring not less than 10 m) shall not exceed 5 percent of the total number of pieces in the lot.

*Method for determination of threads per decimetre in woven fabrics (*first revision*).

†Methods for determination of weight per square metre and weight per linear metre of fabrics (*first revision*).

‡Method for determination of breaking load and elongation at break of textile fabrics (*first revision*).

§Methods for determination of length and width of fabrics (*first revision*).

5. MARKING

5.1 The cloth shall be marked with the following:

- Name of the materials;
- The legends 'All Wool' or 'Blended Wool', in latter case the percentage of wool and other fibres be also indicated;
- Variety number and 'Ref ISS:675';
- Manufacturer's name, initials or trade-mark;
- Month and year of manufacture; and
- Length and width of the piece.

5.1.1 The product may also be marked with Standard mark.

5.1.2 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

TABLE 3 REQUIREMENTS OF CLOTH, BUNTING, WORSTED
(Clause 3.2)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST
(1)	(2)	(3)	(4)
i)	Relaxation shrinkage, percent, <i>Max:</i>		IS : 665-1962*
	Warpway	5.0	
	Westway	4.0	
ii)	Proofing agent, percent:		IS : 3522 (Part II)-1970†
	a) Dieldrin	0.02 to 0.05	
	b) DDT	0.03, <i>Min</i>	
iii)	Colour fastness to:		
	a) Light (<i>see</i> Note)	5 or better	IS : 686-1957‡ or IS : 2434-1967§
	b) Washing	4 or better	IS : 3361-1965
	c) Sea water (for Variety 2 only)	4 or better	IS : 690-1956¶

NOTE — In case of dispute, colour fastness to light shall be determined by the method prescribed in IS : 686-1957‡.

*Method for determination of relaxation shrinkage of woven fabrics containing wool.

†Methods for estimation of common preservatives used in textile industry: Part II.

‡Method for determination of colour fastness of textile materials to daylight.

§Method for determination of colour fastness of textile materials to artificial light (xenon lamp).

||Method for determination of colour fastness of textile materials to washing: Test 2.

¶Method for determination of colour fastness of textile materials to sea water.

6. PACKING

6.1 The cloth shall be packed in bales or cases in conformity with the procedure laid down either in IS : 32-1971* or in IS : 741-1971† as required.

*Code for seaworthy packaging of woollen and worsted yarn and cloth (*second revision*).

†Code for inland packaging of woollen and worsted yarn and cloth (*first revision*).

6.2 Alternatively, the cloth may be packed according to the details given below when specifically agreed to between the buyer and the supplier:

Each piece shall be suitably folded in a rectangular form or wrapped on cardboard or strawboard of suitable size and thickness. Each piece then shall be wrapped with polyethylene film of a minimum 40 microns thickness or alternatively kraft paper. The edges of the kraft paper or polyethylene film shall be gummed or sealed. Alternatively, each piece may be tied with a twine at least at two places. Such pieces, in a suitable number shall then be enclosed in an outer layer of heavy cee jute cloth preferably conforming to IS:3751-1966* to form compact bales. The bales shall be made secure by cross hooping the steel strips at right angles to both the length and width of the bale. The gross weight of the bale shall not normally exceed 40 kg.

7. SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Lot—The quantity of cloth delivered to one buyer against one despatch note shall constitute a lot.

7.2 The conformity of a lot to the requirements of the standard shall be determined on the basis of the tests carried out on the sample selected from the lot.

7.3 Unless otherwise agreed to between the buyer and the seller the number of pieces to be selected at random shall be in accordance with col 1 and 2 of Table 4. To ensure randomness of selection, IS:4905-1968† may be used.

TABLE 4 SAMPLE SIZE AND CRITERIA FOR CONFORMITY
(Clauses 7.3 and 7.4)

LOT SIZE	SAMPLE SIZE	PERMISSIBLE NUMBER OF NON-CONFORMING PIECES	SUB-SAMPLE SIZE
(1)	(2)	(3)	(4)
Up to 50	5	0	2
51 to 150	8	0	3
151 „ 300	13	1	3
301 „ 500	20	1	5
501 and above	32	2	5

*Specification for heavy cee cloth.

†Methods for random sampling.

7.4 Number of Tests and Criteria for Conformity

<i>Characteristics</i>	<i>Number of Tests</i>	<i>Criteria of Conformity</i>
1. Ends, picks, weight, width and visual defects	According to col 2 of Table 4	Permissible number of non-conforming pieces not to exceed the corresponding number given in col 3 of Table 4
2. Length	do	Length of each piece not to measure less than the specified, declared or marked length
3. Breaking load	According to col 4 of Table 4	$\bar{X} - 0.4$ $R \geq$ specified value
4. Relaxation shrinkage	do	$\bar{X} + 0.4$ $R \leq$ specified value
5. Proofing agent:		
a) Dieldrin	do	$\bar{X} \pm 0.4$ R should lie within specified values
b) DDT	do	$\bar{X} - 0.4$ $R \geq$ specified value
6. Colour fastness	do	All the test specimens satisfy the relevant requirement

\bar{X} = Average value obtained by dividing the sum of the observed values by the number of test results.

R = Range, that is difference between the maximum and minimum in a set of observed values.

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